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Quantitative data on various indexes of national development--mass media, "horizontal communication" (mail, telephones, and telegrams), democracy, social growth, literacy, and urbanization--were collected and estimated for more than 100 developing countries for roughly the decade between 1970 and 1980. These data were then used to test various theories and definitions of communication development. The analyses revealed that in all geographic regions, broadcasting showed spectacular growth, while print media grew only modestly. Horizontal communication, social growth, literacy, and urbanization showed some growth, while democracy--defined in Western terms as civil and political liberties--did not fare well in the Third World. Causal inference analysis of the data showed little support either for the original dominant paradigm of communication development that mass media could spur economic and political development or for alternative theories that emphasize horizontal communication and social development. (Author/HOD)

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Third World Communication Development in the 1970s

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ABSTRACT

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Quantitative data on various indices of national development — mass media, "horizontal communication" (mail, telephones and telegrams), democracy, social growth, literacy and urbanization — were collected and estimated for more than 100 developing countries for roughly the decade between 1970 and 1980. These data were then used to test various theories of and definitions of development.

In all geographic regions, broadcasting showed spectacular growth, while print media grew only modestly. Horizontal communication, social growth, literacy and urbanization showed some growth, while democracy — defined here in Western terms as civil and political liberties — did not fare well in the Third World.

Causal inference analysis of the data showed little support for the original dominant paradigm of communication development that mass media could spur economic and political development or for alternative theories that emphasize horizontal communication and social development.

Third World Communication Development in the 1970s

The early years of the 1980s may go down in the short history of communication research as the time of resurgence of interest in the role of communication in national development. The first surge of interest, of course, followed the presentation of the paradigm outlined by Lerner (1958) and developed more fully by Schramm (1964) in their two extraordinarily influential books.

This dominant paradigm, as it was later called, argued that mass communication could both ease and speed the transformation of emerging nations from traditional to modern status. Lerner was quite precise about the process. Once a Third World nation reached a minimum level of urbanization, he argued, the concentration of people set into motion a rapid growth in literacy, which in turn fostered a growth in mass media. From the interplay of the twin forces of literacy and mass media grew what Lerner called "the crowning institution of the participant society," democratic government.

It is important to remember that Lerner did not talk about economic growth as a goal of national development. His emphasis on political democracy was predicated not so much on the ideological value of democracy as on the capacity of democratic systems to absorb and adjust to change rapidly, something missing in rigid traditional cultures.

The linkage of mass media with economic growth came from Schramm whose book was both a handbook for those responsible for development and an advertisement for the power of mass media to function as multipliers of development efforts. In a rare moment of reckless exuberance, he asked (1964, 271):

> How much could we increase the present rate of development, how

much could we smooth out the difficulties of the "terrible ascent," how much further could we make our resources go, how much more could we contribute to the growth of informed, participating citizens in the new nations, if we were to put the resources of modern communication skillfully and fully behind economic and social development?

In recent years, both Lerner and Schramm have been criticized for equating national development with economic growth, of course, but it is hard to argue with the latter's litany of benefits that derive from economic growth (1964, 35):

— knowledge is better than ignorance;

— health is better than disease;

— to eat is better than to be hungry;

— a comfortable standard of living is better than poverty;

— to participate actively in one's nation is better than to be isolated from it.

When Lerner, Schramm and colleagues met in Hawaii to assess the state of national development in 1964, the dominant paradigm was already under attack. The complaints, however, were based less in radical ideology, as they were in the 1980s, than in questions of the universal applicability of a "Western" model of development. Behind the rhetoric that occupied took over most of the conferences, however, were bits and pieces of evidence that demonstrated a remarkable growth of mass media in the Third World.

Several participants at a second conference in 1975, mostly economists, agreed that the record of <u>economic</u> development was mixed. Most Third World

countries had shown substantial growth, but the gap between them and the West had grown. The best guess was that the gap between the privileged, wealthy few and masses within most developing countries had also expanded. And, another melancholy theme, much of the absolute economic growth had been wiped out by population increases.

In communication, however, the record was brighter. Schramam found evidence of surprising — and spectacular — growth. Of the 144 million radios in the Third World, about 100 million were added between 1963 and 1973. In Latin America, the number of radios more than doubled; in Africa, it tripled; in Asia, it more than quadrupled. He speculated that "a conservative estimate is that one-third to one-fourth of all the people in the developing regions now have direct access to radio broadcasts" (Schramm and Lerner 1976, 3).

Growth in other media was less impressive but steady. Newspaper circulation, according to Schramm's analysis of Unesco data, was growing at a moderate rate. Television was increasing rapidly, although the 1963 starting figure was close to zero. Telephones were growing at about 6 percent a year; the number of movie seats had actually declined slightly. He also noted that several Third World countries — India, Brazil, Indonesia and Iran — were about to begin using communication satellites.

Two factors prevented a totally positive interpretation of the data. One was that the gap between the developing countries and the developed West was greater in 1975 than it had been a decade earlier because mass media had grown at a much faster rate there than in the Third World. The second was that continued population growth in the Third World undermined many of the absolute gains. For example, the rate of Third World illiteracy declined steadily during the decade between the conferences, but the population increased so much faster that the total number of illiterates in developing countries was greater

in 1973 than a decade earlier.

Most of the conference, however, dealt with ideological challenges to the traditional view of development that emphasized industrialization and economic growth as goals. The presentation by Everett Rogers, which was later expanded for a special issue of Communication Research (Rogers 1976), was especially important.

For one thing, it articulated — and offered some evidence in support of — many of the concerns that others had tried to define. But beyond that, it gave them authority. Rogers was a leading figure in communication development research and had been strongly identified with the Lerner-Schramm approach. His acknowledgment of some of the criticism of the dominant paradigm, if not a complete about-face from his earlier position, helped to make even the more radical critics of the Lerner model respectable.

After retracing the elements of the dominant paradigm — the industrial revolution in the West, capital-intensive technology, the emphasis on economic growth, quantification — and some of the intellectual criticisms of it, Rogers noted four world events in the late 1960s and '70s that challenged faith in the model. The first was evolution of environmental pollution in the industrialized world as a major social issue. It raised the question whether heavy industrialization supported by high technology was the appropriate engine for Third World development.

The second event was the world oil crisis in 1973 which showed that a favored few Third World countries — those fortunate enough to be located over oil reserves — could influence the industrialized nations to a degree not even the most radical critics of the West had dreamed of. Of course, the rapid quadrupling of oil prices also turned the modestly impressive economic gains of most Third World countries in the previous decade into shambles and was the

main reason for the near collapse of many Third World economies.

The third event, and probably the most important politically in the 1970s, was the reestablishment of normal relations between the People's Republic of China and the rest of the world. By this time, much of the Third World had identified with the Non-Aligned Movement, rejecting both the capitalist model of Western development and the socialist model of the Soviet Union. China, which had challenged the Soviet Union's claim to leadership of revolutionary communism a decade earlier, now offered a new model for development. It was very different from the dominant paradigm and from the outside, it looked like a success story. Rogers put it this way (221-222):

> Here was one of the poorest countries, and the largest, that in two decades had created a miracle of modernization. A public health and family planning system that was envied by the richest nations. Well-fed and clothed citizens. Increasing equality. An enviable status for women. And all this was accomplished with very little foreign assistance and presumably without much capitalistic competition. China, and to a lesser extent Cuba, Tanzania and Chile (in the early 1970s), suggested that there might be alternatives to the dominant paradigm.

In contrast, Rogers pointed to the unimpressive record of development under the dominant paradigm. The result, he noted, was mostly "further stagnation, a greater concentration of income and power, high unemployment and food shortages in these nations." If Lerner found that the product of the first decade of development was mostly a revolution of rising frustrations, Rogers' assessment was even more bleak. Was a new paradigm in order?

The Rogers paper sketched the elements of a new paradigm:

1. Emphasis on the equality of distribution of information and socioeconomic benefits with priority in development plans to rural areas and the urban poor.

2. Popular participation in self-development planning and execution and decentralization of authority and responsibility.

3. Self-reliance and independence in development, relying on local resources. This meant that the path of development could vary from country to country and even from village to village.

4. Integration of traditional and modern systems and values. The use of both acupuncture and antibiotics in Chinese medicine was cited as an example of the linking of traditional and modern techniques.

Finally, Rogers attempted a new definition of "development" itself as "a widely participatory process of social change in a society, intended to bring about social and material advancement (including greater equality, freedom, and other valued qualities), for the majority of the people through their gaining greater control over their environment." (225) Such a goal, Rogers noted delicately and somewhat inconsistently, might require developing nations "to forego certain advantages of liberal democracy for the tighter government control that they thought to be necessary to maintain nationhood over tribal, religious, or regional factions."

By the time the Rogers paper appeared, the dominant paradigm was clearly on the defensive. What had been a distrust of a too-Western model had become a major ideological issue: Were Western values and politics being used to replace the imperial armies with a new form of cultural imperialism?

The ideological issues that pit the old and new paradigms of communication

and national development are well known and continue to be argued at length. What is missing in most of these debates is evidence of the growth of mass media and related factors during the tubulent decade of the 1970s.

The Record of the 1970s

It should come as no surprise that statistics on Third World media and other indicators of development are hard to come by. That may be one reason why so little attention in the renewed ideological debate has been given to the record of development in the 1970s. But it is no excuse.

In most sources, such as the Unesco yearbooks, missing data are common enough that any kind of regional summary or comparison across the decade is impossible. In other circumstances, however, the problem is too much information. For example, the number of TV sets in Algeria was either 39,000 in 1978 (Unesco), 256,000 in 1981 (World Radio TV Handbook) or 900,000 in the same year (BBC). The choice of sources makes an obvious difference in the results.

Despite these problems, the value of a reasonably complete and accurate record of Third World development in the 1970s is great enough to justify the effort required. For this exercise, we have drawn heavily on the Unesco yearbooks but supplemented these data two ways. The first was to use other sources, such as the BBC annual estimates of radio and TV receivers, the invaluable World Military and Social Expenditures (Sivard 1982), the Overseas Development Council's annual assessment of U.S. foreign policy in the Third World (Hansen 1982) and the annual survey of political and civil liberties published by Freedom House (Gastil 1982).

The second was to estimate missing data by dividing the list of Third World countries into deciles according to per capita GNP, then to use the mean

of the decile group as as estimate of other measures for countries where an actual figure was not available. This gave us a complete data matrix and allowed us to compare across regions and time.

Results

For the sake of brevity, we can only present the results of this exercise and comment in general terms. Tables 1 and 2 are summaries of media growth taken from Schramm's presentation at the 1975 Hawaii conference. In some cases, they are reformulations of the original figures. Tables 3 and 4 are taken from the latest Unesco yearbook.

Tables 5 through 8 draw from various sources. The figures on newspapers are from Unesco; broadcasting data are BBC estimates. The "horizontal communication" data — a term used in the new debate to represent personal communication — are from Unesco and AT&T publications. The indexes of civil and political liberties are from Freedom House's estimates. In both measures, a score of "1" means "free," while a "7" indicates "not free." The terms obviously derive from a Western definition of civil and political liberties. The physical quality of life index (PQLI) incorporates life expectancy at age one, infant mortality and literacy.

Table 9 summarizes the growth of radio and television receivers from 1965 to 1982 and is taken from BBC annual estimates.

Tables 1 through 9 about here

It is difficult even to begin to sort out patterns in the flood of information in these tables. Regional summaries in some cases obliterate

useful differences among countries within one region, and one or two large countries — China and India, are obvious examples — can distort regional totals. But, in fact, several important patterns do appear in all of the Third World geographic regions. Space permits only a highlighting of them.

** The physical quality of life increased modestly in the 1970s, while Western-style democracy fared poorly.

** In most parts of the Third World, newspaper circulation per thousand population declined. The "death of print" prediction may be as premature in the developing countries as it was in the West in the 1960s and '70s, but newspapers do not seem to have a secure future.

** Broadcasting, in contrast, exploded throughought the Third World. In every country, regardless of level of economic development and political system, radio and especially television grew at rates that probably have no parallel in history.

** The Third World's share of the world's radio and TV receivers, while still very small, also increased significantly. This is not the result of transfer of resources from the West but rather the spectacular growth rate in the developing countries.

** Horizontal communications, particularly telecommunications, also grew dramatically in the Third World. The near-universal agreement of the importance of telecommunications to the growth of mass media and economic development (Saunders et al. 1983; Pierce and Jequier 1983) underscores the importance of this development.

A core concern of the dominant paradigm is that communication growth not only accompanies econmic development but promotes it as well. The proposition is hard to test, although both Lerner and Schramm at various times have presented time-series correlational data in support of it (Lerner 1958, Schramm

and Lerner, 1976). With the data collected here, it is possible to test the model more precisely. The several measures of media were consolidated (by factor analysis) into a composite measure; it and the figure for GNP, as an indicator of economic development, were then then analyzed with a path analysis technique.

The results, shown in Table 10, at first seem to support the dominant paradigm. The lagged correlations are substantial and supportive of the conclusion that media lead to GNP rather than the other way around. However, when the indirect contributions of one variable to another and the auto-correlations of the variables across time are removed, support for the hypothesis disappears. In fact, the direct contribution of media to GNP across time is negative.

Table 10 about here

Neither complete data nor path analysis techniques were available in previous decades, so one cannot be too critical of early efforts to test the dominant paradigm. However, even the more systematic earlier tests (Frey 1973) were less than consistent so we ought not to be surprised to find a preponderdance of opinion in the 1980s debate arguing that mass media play at most a marginal role in economic and social development.

That does not mean, however, that the evidence supports the new paradigm any better. In fact, neither the data here nor anecdotal evidence gives much support to those who argue that communication, particularly as employed in countries like China, Cuba and Tanzania, makes any greater contribution to social goals like self-reliance, social participation or equity of distribution

of wealth and power or even that these countries have reached these goals.

Hedebro (1983) argues that these three countries are models of the new paradigm of communication but presents little evidence to support the contention. The statistics in our data set argue for a different conclusion. While all three countries have shown somewhat greater success in areas of health and education than similar countries in their regions, there is no evidence that communication has had much to do with it. And in other areas — particularly economic development and self-sufficiency — they tend to lag behind their neighbors.

Discussion

The record of mass media growth in the 1970s does not lend much support to the 25-year-old dominant paradigm, although mass communication is and continues to be strongly related to both economic development and, less so, to Western-style measures of participatory government. Broadcasting and, to a lesser degree, telecommunications have exploded even in the most underdeveloped countries to the point where even the most remote villages have some regular contact with the larger world. Probably because the relative cost of broadcasting and telecommunication has dropped so much, this unprecedented expansion has taken place in countries as capitalist-oriented as Mexico and Kenya and as socialist-oriented as Cuba and Tanzania.

If the evidence does not support the contention that mass media contribute to economic development, it does not support the hypothesis of the new paradigm either. In fact, anecdotal evidence suggests that the new paradigm has fared worse than the old one. Even so strong a supporter of the radical alternative model as Cees Hamelink (1983) had to conclude that the record of development in Cuba, Tanzania and China was dismal. Cuba's continued economic dependence on

the Soviet Union produced a "need to be militantly ideological" (41), a phrase one could translate into "mouthpiece for the Soviet Union." In Tanzania, he notes (49) that even in 1980, more than half of the national budget came from foreign economic aid; he might have added that a large part of the decline in agriculture was the result of an ill-conceived plan to force rural collectivization.

For China, even more powerful evidence comes from several recent critical appraisals (Butterfield 1983; Mosher 1983) that present a far different picture of life in a totalitarian dictatorship than the one that bedazzled privileged Western visitors in the 1960s and 1970s. In fact, the China shown to outsiders — "a miracle of modernization," in Rogers' phrase — may well have been the biggest Potemkin village in history. In all cases, the impressive social gains were made at the expense of individual liberty and generally unrelated to mass media except when the latter were used in the time-honored method of indoctrination by a monopoly central government.

Communication from the grassroots to promote participatory democracy and authentic culture? Not much evidence of it in the record of those countries that embraced the radical alternative paradigm of communication development.

One can hope that the new interest in communication development in the 1980s will be accompanied by a sense of realism about the contribution of mass media to national development. This means a recognition that mass media play a relatively modest role in national development whether the latter is defined as economic development and political stability or cultural independence and social equity.

A second point in a realistic assessment of the 1980s is that telecommunications and broadcasting will continue to grow at their current exponential rate. This has implications for those who advocate a policy of

national cultural isolation for Third World nations (not likely or advisable) or those who would promote development by maintaining a centralized monopoly on communication (not likely either). On the other hand, the emerging world culture carried through an expanding global telecommunications and broadcasting system — particularly one dominated by Western images — is likely to lead to a further increase in the "revolution of rising frustrations" that Lerner noted two decades ago. The outlook for the next decade is not the pattern envisioned by either of the alternative paradigms.

TABLE 1
Third World Media Growth in the 1960s

	1963	1973	Change
Daily newspaper circulation (000s)			
Africa	3,319	4,775	+44%
Asia	14,028	21,867	+56%
Latin America	15,730	18,073	+15%
All developing	33,077	44,715	+35%
Radio receivers (000s)			
Africa	6,020	18,843	+213%
Asia	17,059	75,987	+345%
Latin America	22,482	49,850	+122%
All developing	45,561	144,680	+218%
Television receivers (000s)			
Africa	329	1,503	+357%
Asia	868	7,110	+719%
Latin America	4,756	19,692	+314%
All developing	5,953	28,305	+375%

Data from Lerner and Schramm 1976, 12.

TABLE 2
Third World Media Growth per Thousand Population in the 1960s

	1963	1973	Change
Daily newspaper circulation			
Africa	10	14	+40%
Asia	17	20	+18%
Latin America	73	62	-15%
Radio receivers			
Africa	32	54	+69%
Asia	12	41	+242%
Latin America	104	171	+64%
Television receivers			
Africa	<1	4	+400%+
Asia	<1	4	+400%+
Latin America	22	68	+209%

Data from Schramm and Lerner 1976, 13.

TABLE 3
Overview of Mass Media in the 1970s

	1965	1977	Change
Number of daily newspapers in Third World			
	2,655	3,342	+26%
Total circulation of Third World daily newspapers (millions)			
	36	53	+47%
Newprint consumption (metric tons)			
	132,914	160,263	+21%

* * * * * * * * * *

	1970	1980	Change
Number of daily newspapers			
Developed countries		4,660	
Developing countries		3,580	
Total daily newspaper circulation (millions)			
Developed		374	
Developing		79	
Newsprint consumption per person in kilograms			
Developed	17.8	19.3	+8%
Developing	0.9	1.3	+44%
Radio transmitters			
Developed	16,200	20,800	+84%
Developing	5,900	7,200	+22%
Radio receivers (000s)			
Developed	628,200	944,514	+50%
Developing	122,411	315,886	+158%
Television transmitters			
Developed	16,900	33,100	+96%
Developing	800	1,900	+138%
Television receivers (000s)			
Developed	230,738	443,903	+92%
Developing	18,762	68,879	+267%

Data from Unesco Statistical Yearbook, 1982.

TABLE 4
Distribution of world mass media

	Developing countries	Developed countries
Newspaper circulation		
1979	17%	83%
Newsprint		
1980	16%	84%
Radio transmitters		
1970	27%	73%
1980	26%	74%
Radio receivers		
1970	16%	84%
1980	25%	75%
Television transmitters		
1970	5%	95
1980	5%	95%
Television receivers		
1970	8%	92%
1980	13%	87%

Data from Unesco Statistical Yearbook 1982.

TABLE 5
National Development in Africa

Mass media			
	1966	1977	Change
Number of daily newspapers	188	144	-23%
Total circulation (000s)	3,972	6.296	+59%
Circulation per thousand people	12	15	+25%
	1970	1981	
Radios (000s)	18,490	52,245	+183%
Per thousand people	58	120	+107%
Televisions (000s)	1,270	10,467	+724%
Per thousand people	4	24	+500%
Horizontal communication			
	1970	1978	
Domestic mail (000s)	1,241,920	2,688,061	+116%
Foreign mail (000s):			
In	606,950	854,262	+41%
Out	422,923	481,245	+14%
Total	1,029,873	1,335,508	+30%
Telegrams (000s):			
Domestic	24,275	96,202	+296%
Foreign	3,101	6,141	+98%
Telephones per thousand people	7.7	16.7	+117%
Democratic development			
	1973	1982	
Civil liberties	5.26	5.54	-5%
Political liberties	5.72	5.48	+4%
Social development			
	1970	1981	
PQLI	31	37	+19%
	1970	1979	
Percent with clean water	28%	36%	+29%
Literacy			
	1960	1979	
	17%	27%	+59%
Urbanization	1970	1980	
	23%	25%	+9%

Estimated from various sources; see Chapter Three.

TABLE 6
National Development in the Middle East

Mass media			
	1966	1977	Change
Number of daily newspapers	489	607	+24%
Total circulation (000s)	4,548	4,783	+5%
Circulation per thousand people	45	37	-18%
	1970	1981	
Radios (000s)	10,110	32,850	+225%
Per thousand people	105	250	+138%
Televisions (000s)	892	11,150	+1150%
Per thousand people	9	85	+844%
Horizontal communication			
	1970	1978	
Domestic mail (000s)	1,741,450	1,464,529	-16%
Foreign mail (000s):			
In	260,919	431,265	+65%
Out	163,811	326,894	+100%
Total	424,730	758,894	+79%
Telegrams (000s):			
Domestic	16,906	26,335	+55%
Foreign	1,787	1,523	-15%
Telephones per thousand people	36.9	74.9	+103%
Democratic development			
	1973	1982	
Civil liberties	5.13	5.27	-3%
Political liberties	5.27	5.07	+4%
Social development			
	1970	1981	
PQLI	48	54	+13%
Percent with clean water	47%	63%	+34%
Literacy			
	1960	1979	
	28%	41%	+46%
Urbanization	1970	1980	
	42%	47%	+12%

Estimated from various sources; see Chapter Three.

TABLE 7
National Development in Asia

Mass media	1966	1977	Change
Number of daily newspapers	916	1,431	+56%
Total circulation (000s)	34,436	35,500	+3%
Circulation per thousand people	19	16	-16%
	1970	1981	
Radios (000s)	48,141	190,500	+296%
Per thousand people	27	82	+204%
Televisions (000s)	1,900	33,200	+1647%
Per thousand people	1	14	+1300%
Horizontal communication	1970	1978	
Domestic mail (000s)	2,353,957	3,150,189	+34%
Foreign mail (000s):			
In	514,248	690,786	+34%
Out	324,708	442,687	+36%
Total	838,956	1,133,473	+35%
Telegrams (000s):			
Domestic	199,939	225,678	+13%
Foreign	9,223	10,831	+17%
Telephones per thousand people	13.7	27.6	+101%
Democratic development	1973	1982	
Civil liberties	4.07	5.52	-11%
Political liberties	4.25	4.41	-4%
Social development	1970	1981	
PQLI	57	61	+7%
	1970	1979	
Percent with clean water	17%	29%	+71%
Literacy	1960	1979	
	46%	56%	+22%
Urbanization	1970	1980	
	21%	23%	+10%

Estimated from various sources; see Chapter Three.

TABLE 8
National Development in Latin America

Mass media			
	1966	1977	Change
Number of daily newspapers	1,062	1,160	+9%
Total circulation (000s)	19,149	19,966	+4%
Circulation per thousand people	70	56	-20%
	1970	1981	
Radios (000s)	45,700	116,299	+245%
Per thousand people	169	309	+83%
Televisions (000s)	14,700	44,400	+202%
Per thousand people	54	118	+119%
Horizontal communication			
	1970	1978	
Domestic mail (000s)	3,673,689	5,017,767	+37%
Foreign mail (000s):			
In	601,986	1,088,438	+81%
Out	377,202	453,664	+20%
Total	979,188	1,542,102	+57%
Telegrams (000s):			
Domestic	115,607	146,700	+24%
Foreign	2,632	2,314	-12%
Telephones per thousand people	39.1	59.4	+52%
Democratic development			
	1973	1982	
Civil liberties	3.20	3.63	-13%
Political liberties	3.50	3.76	-7%
Social development			
	1970	1981	
PQLI	71	76	+7%
	1970	1979	
Percent with clean water	53%	68%	+28%
Literacy			
	1960	1979	
	67%	79%	+15%
Urbanization	1970	1980	
	57%	61%	+7%

TABLE 9
Growth of broadcasting 1965-1982

	(000s)	Per thousand population	Increase 1980-1984
Developing nations			
Radio receivers			
1965	65,659	30	
1970	122,441	48	
1975	220,727	83	
1980	315,886	104	
1982	391,779	120	Total: 41%
1984	445,907	132	Per thousand: 57%
Television receivers			
1965	8,045	4	
1970	18,762	8	
1975	32,570	12	
1980	68,897	23	
1982	99,200	30	Total: 79%
1984	122,454	36	Per thousand: 57%
Developed nations			
Radio receivers			
1965	424,141	420	
1970	628,200	594	
1975	766,674	690	
1980	944,514	819	
1982	992,121	844	Total: 14%
1984	1,007,844	884	Per thousand: 8%
Television receivers			
1965	154,305	153	
1970	230,738	218	
1975	323,176	291	
1980	443,903	385	
1982	483,305	411	Total: 19%
1984	527,627	443	Per thousand: 15%

Developing nations' share of world totals

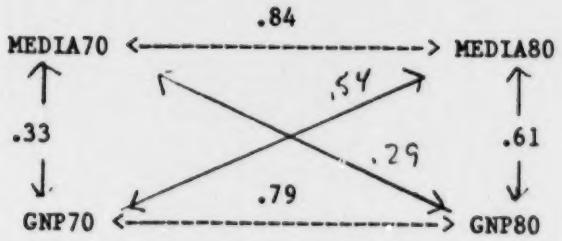
	Radio	Television
1965	13%	5%
1970	16%	8%
1975	22%	9%
1980	25%	13%
1982	28%	17%
1984	29%	19%

From BBC annual estimates.

TABLE 10

Model of Economic and Mass Media Development

Correlation Diagram



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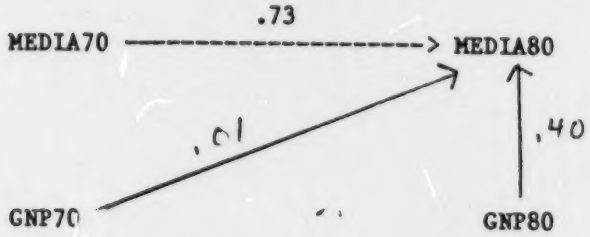
Path Coefficient Diagrams



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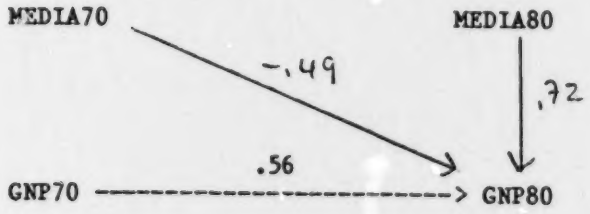

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